TEST REPORT

Report No: METS-R 4444 A/2020

Client / Establishment	: M/s. International Business General Trading (IBGT) Office 804, Capricorn Tower, Sheikh Zayed Road, DIFC, Dubai United Arab Emirates

Sample ID	: METS-S20-4444
Sample Receiving Date	: 06/12/2020
Reporting Date	: 21/12/2020
Date of Analysis	: 06/12/2020-13/12/2020
Tested by	: GB
Issue No	: 01 (Re-Issue Date: NA)

Sample Information:

Sample Description	: Hand Sanitizer
Brand	: Zoono
Expiry Date	: March 2025
Quantity	: 500 ml

Details of present study and findings

Objective: Determining Antibacterial Efficacy of Hand sanitizer in accordance with BSEN 1276:2019

Conclusion: On the basis of the results it can be concluded that the tested specimen was observed with a 6 log reduction in bacterial count at 24 hrs. contact time against *Escherichia coli K12, Enterococcus hirae, Pseudomonas aeruginosa, Staphylococcus aureus, and Salmonella typhimurium.*

Method Deviation: The analysis for the 24 hrs. contact time and the test organism *Salmonella typhimurium* was performed as per customer request.

(Refer Page No. 2-3 for more details)

Prepared by

Microbiologist
Biological Science Division (BSD)
Employee Code: METS AJ EC 137

Approved by

Quality Department

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Result of Microbiological Analysis:

Test method reference:

The test was carried out as specified by BSEN 1276:2019. Test involves the preparation of a standard suspension of test organisms containing 1.5 – 5.0 x 10^8 cells per ml of the four standard bacteria *Escherichia coli K12*, *Enterococcus hirae*, *Pseudomonas aeruginosa*, Staphylococcus *aureus* and *Salmonella typhimurium*

Test Procedure:

The sample of the product as delivered or diluted to a test suspension of bacteria in a solution of an interfering substance. The mixture is maintained at 20 degrees Celsius for 24 hrs. At the end of this contact time an aliquot was taken and the bactericidal or bacteriostatic activity in this portion is immediately neutralized or suppressed by a validation method. After 5 mins of neutralization time 1 mL of the sample mixture was taken and performed pour plate method. Further kept for incubation at 37°C for 48 hrs. The method of choice is dilution neutralization. The numbers of the surviving bacteria the sample are determined and the reduction is calculated.

Reference culture	*Escherichia coli* K12- NCTC 10538
	Pseudomonas aeruginosa – ATCC 15442
	Staphylococcus aureus – ATCC 6538
	Enterococcus hirae - ATCC 10541
	Salmonella typhimurium –ATCC 13311
Clean condition	0.3 g/L: Bovine Serum Albumin
Dirty condition	3.0 g/L Bovine Serum Albumin
Agar	Tryptone Soya Agar
Incubation temperature	37°C
Active Substance	Benzalkonium chloride
Neutralizers	Polysorbate 80, 30 g/l + lecithin, 3 g/l + Sodium thioglycolate 30g/L prepared in de-ionized water and autoclaved for 15 minutes at 121°C.
Time of Exposure	24 hrs.
Appearance	Clear

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Clean Condition			**Time of Exposure- 24 hr.**	
Test Microorganism	**Test Method**	**Viable count for test mixture (Log N_0)**	**Reduction in Viability (Log N_a)**	**Bactericidal effect (Log Rdn)**
Staphylococcus aureus	BS EN 1276:2019	7.49	0.69	6.79
Escherichia coli K12		7.83	1.17	6.66
Pseudomonas aeruginosa		7.36	1.00	6.86
Enterococcus hirae		7.31	0.69	6.61
Salmonella typhimurium		7.67	1.30	6.37

Image of the Sample

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The above test results are only applicable to the sample (s) referred above. This report shall not be reproduced except in full, without the written approval of METS laboratory.

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-End Report-

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